STATE OF UTAH

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF SOLID AND HAZARDOUS WASTE

UTAH SOLID WASTE PLAN UPDATE

Through 2006

INTRODUCTION

In the years since the *1994 Utah Solid Waste Plan* was written, the activities at solid waste facilities and emphasis of solid waste management in the State have changed. Regulation of solid waste disposal has been extended to all disposal facilities in the state and most disposal facilities have gone through at least one permit renewal. The general structure of solid waste management has also changed in the counties with large populations, while remaining constant in the less populated counties. In the past, local governments operated most of the disposal facilities that accepted municipal waste. This is still the case in the less populated counties. Currently, the emphasis of solid waste management in the more populated counties has shifted to regional facilities. The existing regional facilities are operated by private waste management companies. However, multi-county agreements and regional landfills operated by counties are in the permitting process.

Planning has turned from addressing only disposal capacity to addressing the need for waste diversion, recycling and management of the more toxic portion of the waste stream, such as household hazardous waste. Composting has become an important part of the mix of solid waste management options for many areas. Household hazardous waste collection programs are operated in several counties.

The following is a summary of the solid waste management activities in Utah and a historical picture of the changes over several years. Information provided in this report has been compiled from the annual reports submitted by solid waste facilities in March of each year for the previous calendar year. The March 2007 annual report, covering calendar 2006 data is the most recent data used. As many facilities do not have scales or do not weight all entering loads, the annual reports are often estimates of the tons of waste received.

To understand information presented in this document, knowledge of the Utah solid waste program is necessary. Landfills are broken down into classes. These classes are generally, based on the type and volume of waste accepted at the site. The following is a list of the landfill classes and the characteristics of each class.

> Class I - A landfill that can accept any type of non-hazardous solid waste and receives an average of more than 20 tons of waste per day. Municipal solid waste (MSW) is the major type of waste that is received by this type of facility. Landfills operated by local governments generally fit into this class.
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> Class II - A landfill that can accept any type of non-hazardous solid waste and receives an average of 20 tons or less of waste per day. MSW is the major type of waste that is received by this type of facility. Small landfills operated by local governments generally fit into this class.
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> Class III - An Industrial landfill that can accept non-hazardous solid waste generated by an industry. Class III landfills may not receive MSW. This class is divided into Class IIIa and Class IIIb. Class IIIa landfills can receive conditionally exempt small quantity generator hazardous waste for disposal, Class IIIb landfills cannot.

Class IV - A landfill for disposal of construction and demolition waste, dead animals, asphalt, yard waste, some petroleum contaminated soils, and tires. Class IV landfills may not receive MSW or any other waste not listed above. This class is divided into Class IVa and Class IVb. Class IVa landfills can receive conditionally exempt small quantity generator hazardous waste, if this waste is part of the waste streams listed above, for disposal, Class IVb landfills cannot.

Class V - A landfill that is intended to be operated for a profit. Class I through IV landfills are separated by the type and amount of waste that can be accepted. Class V landfills are distinguished from the other landfill classes by the fact that they are operating for a profit. Therefore, the specific regulations that apply to a Class V landfill are tailored to the type of waste that is received. Some Class V landfills may receive any non-hazardous waste and are required to meet stringent design, operation, monitoring, and closure standards. Other Class V landfills accept only a limited waste stream and are required to meet less stringent standards. Class V landfills are required by Utah Code Annotated (UAC) section 19-6-108(3)(c) to receive approval of the Legislature and Governor prior to operation.

Class VI – A landfill that is intended to be operated for a profit and may receive only construction and demolition waste , dead animals, asphalt, yard waste, some petroleum contaminated soil, and waste tires (as allowed under UCA 19-6-804). No conditionally exempt small quantity generator hazardous waste is allowed in these facilities. These landfills have the same requirements as Class IV landfills except the approval process requires the added steps of Governor and Legislative approval prior to operation (UCA 19-6-108(3)(c)).

While landfills in Utah are not generally restricted from receiving wastes from outside of the state, no Class II, III, IV, or VI landfill has reported receiving out-of-state waste. Two Class I landfills reported receiving waste from outside the state. One landfill receives municipal waste from a bordering community in Arizona and one receives municipal and industrial waste from several western states. One Class V landfill in Utah has received both industrial and municipal non-hazardous waste from outside of Utah. Out-of-state municipal waste received at Utah landfills has not been counted in the calculation of per person waste disposal.

For purposes of showing waste disposal rates for different types of waste, the waste received at Class V landfills, and generated within the state, has been added to the appropriate waste type, i.e., municipal, industrial or construction/demolition and waste disposed at Class VI landfills has been added to the total construction/demolition waste volume. This breakdown is possible for Class V and VI landfills because of the records that must be keep for payment of state fees and the limits on the waste stream received at some sites. A breakdown between municipal, industrial, or construction and demolition waste for Class I and II landfills is not possible for all sites. Annual reports beginning in 2003 show separation of different waste types at some Class I and II landfills. Where separation of different waste types is possible, it has been done in this report. In viewing the waste disposal data, it must be recognized that some non-municipal waste, disposed at Class I and II landfills, is included in the municipal category. Throughout this report the term construction/demolition waste will be used to refer to all of the waste types that can be disposed at Class IV or VI landfills.

WASTE DISPOSAL

Municipal Waste

The solid waste facility annual reports can be used to provide an estimate of the basic breakdown of the waste stream into municipal waste, industrial waste, and construction/demolition waste. As landfills operated by municipalities have been required to pay a fee to the state based on municipal waste disposed, more facilities are braking out the different components of the wastes received. Reports since 2003 reflect a more accurate picture of the disposal of municipal waste in Utah. It is assumed, for this report, that all waste disposed at a Class I or II facility is MSW unless the facility reports a brake down by waste type. Many annual reports reflect the waste that was measured or estimated at the facility gate and may not reflect waste removed for recycling prior to disposal.

US Environmental Protection Agency (USEPA), in *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2005*, estimates that the average municipal waste generation rate for the United State is 4.54 pounds of waste per person per day. Nationally the rate of disposal is reduced 1.46 pounds per person per day by waste diversion activities and 0.62 Pounds per person per day by energy recovery. The result is a national disposal rate of 2.46 pounds per person per day.

The Division of Solid and Hazardous Waste has no way of estimating the generation rate for Utah. However, the disposal rate can be estimated from the annual reports from disposal facilities and transfer stations. Municipal waste generated and disposed in Utah is estimated to total 2,610,447 tons in 2006 (as reported on March 2007 annual reports). Based on the 2006 population estimate for Utah this equates to a municipal waste disposal rate of 5.47 pounds per person per day. Table 1 shows the municipal waste disposal rate and per person disposal rate by county for the 2006.

Several factors may affect the Utah municipal waste disposal rate. First, many landfills provide only estimates of the tons disposed during the year (no scales are available at many of the smaller landfills). These estimates may severely over or under state the municipal waste received. An example of possible overstating of waste received is Daggett County, which has a disposal rate of 20.21 lb/person/day. An example of possible understating of waste received is Sanpete County, 2.23 lb/person/day. The use of estimated tons is becoming less of a factor as all large landfills and some smaller ones have installed scales in the past few years.

Second, many landfills take both municipal and construction/demolition waste. The national numbers given by USEPA are for municipal waste only. Consequently the tons of waste reported by Utah landfills that do not separate municipal waste and construction/demolition waste would be higher than those reported by the USEPA. The 2003 annual report was the first time that municipal waste landfills had been given the opportunity to report separate totals for municipal, industrial and construction/demolition waste. Not all landfills separate the waste types but those that do report up to 1/3 of the waste received is construction/demolition waste. Landfills are required to pay a fee to the state that is based on the total tons of municipal waste

received at the facility. Imposition of this fee has encouraged more landfill operators to break out the different waste types, thus making this less of a factor in the calculation of municipal waste disposal.

Third, USEPA numbers exclude waste from industrial sources. In most cases it is not possible to exclude industrial waste from the total waste received at Utah landfills. Again the fee described above has had an affect on the measurement of industrial waste entering landfills.

Utah has one municipal waste incinerator operating. Waste received at that incinerator has been included in the total of municipal waste generated in the state. Ash from the incinerator is disposed of at the landfill owned by the facility. An effort has been made to remove the ash component from the calculations for total municipal waste generated.

Table 1: Utah Waste Statistics for 2006

County	Municipal Waste (Tons)	Percent of Total Municipal Waste	Population	Per Person Disposal (lb/person/day)
Beaver	6,946	0.27%	6,428	5.92
Box Elder	22,598	0.87%	45,987	2.69
Cache	89,485	3.43%	105,671	4.64
Carbon	NA[1]		19,504	
Daggett	3,500	0.13%	949	20.21
Davis	257,334[2]	9.86%	286,547	4.77[3]
Duchesne	15,692[4]	0.60%	15,585	5.52
Emery	11,235	0.43%	10,438	5.90
Garfield	7,106[6]	0.27%	4,772	6.34[7]
Grand	8,757	0.34%	9,024	5.32
Iron	41,533	1.59%	43,424	5.24
Juab	4,811	0.18%	9,315	2.83
Kane	8,000	0.31%	6,294	6.96
Millard	17,077	0.65%	13,230	7.07
Morgan	NA[2]	0.00%	8,888	4,77[3]
Piute	NA[6]	0.00%	1,373	6.34[7]
Rich	2,643	0.10%	2,121	6.83
Salt Lake	1,180,270	45.21%	996,374	6.49
San Juan	10,241	0.39%	14,647	3.83
Sanpete	10,490	0.40%	25,799	2.23
Sevier	18,745	0.72%	19,984	5.14
Summit	45,309	1.74%	36,871	6.73
Tooele	27,209	1.04%	54,357	2.74
Uintah	42,904	1.64%	27,747	8.47
Utah	276,349[8]	10.59%	475,425	3.19
Wasatch	20,785[4]	0.80%	21,053	5.41
Washington	186,400	7.14%	134,899	7.57
Wayne	2,018	0.08%	2,535	4.36
Weber	199,534[9]	7.64%	215,870	5.06
Total	2,610,447[10]		2,615,111	5.47[11]

[1]Carbon County waste is disposed at the ECDC landfill.
[2]Waste from Davis and Morgan counties is combined at the Wasatch Energy Recovery Facility and Landfill
[3]Per person generation rate is for Davis and Morgan counties
[4]Duchesne and Wasatch counties' waste is disposed at the Duchesne County landfill, however tons disposed has been separated
[5]Per person generation rate for Duchesne and Wasatch counties is separate and based on Wasatch transfer station tons
[6]Garfield and Piute counties' waste is disposed at the Garfield County landfill
[7]Per person generation rate is for Garfield and Piute counties combined
[8]Some municipal waste from county goes through a transfer station and is disposed at Wasatch Regional landfill
[9]All county municipal waste goes through a transfer station and is disposed at Wasatch Regional landfill
[10]Individual county totals do not agree with state disposal total because of differences in reporting of transfer station and disposal tonnages. The total used is from the annual reports of disposal tonnage.
[11]Pounds per person per day shown is calculated from annual report data not from the total for counties shown on the table

Figure 1and Table 1, show the total municipal waste disposed in Utah for selected years from 1994 through 2006. It is apparent from Figure 1 that municipal waste disposal in Utah has fluctuated slightly over the years shown. Although the population has continued to grow, the total municipal tons from 1994 through 2006 shows variability but the trend is of a slight increase through the years. This trend may be the result of more accurate reporting by landfills and the steady population increase. Separation of construction/demolition waste from municipal waste at more landfills may have served to moderate the increase. Other factors that may affect this trend are the growth in recycling or composting and the economic climate.

The Utah pre person disposal rate from 1994 through 2006 is shown in Table 2. As expected Table 2 shows the same fluctuation that is shown in the total municipal waste disposed per year. Per person rates are also affected by the population estimate used as well as all of the other factors previously stated. The year 2000 number is the most accurate as it reflects the population from the 2000 censes.

Utah per person municipal waste disposal in 2000 is over two and one half pound more than the national average shown in the USEPA *MUNICIPAL SOLID WASTE IN THE UNITED STATES: 2000 FACTS AND FIGURES*. As discussed previously, this difference may be accounted for by the inability to separate industrial and construction/demolition waste from municipal waste at many landfills and the other factor stated above.

Table 2 also shows the municipal waste disposal rate for Utah County. This county processes most of the municipal waste through two transfer stations and most of the waste is weighted. The two transfer facilities accept only limited amounts of construction/demolition waste. The facilities do, however, accept industrial waste generated within the county. Only one landfill in the county receives waste directly (not through a transfer station) and accounts for only 3% of the total county waste. This facility also separates C/D waste from municipal waste totals.

Figure 1 - Municipal Waste Disposed in Utah for 1994 through 2006.

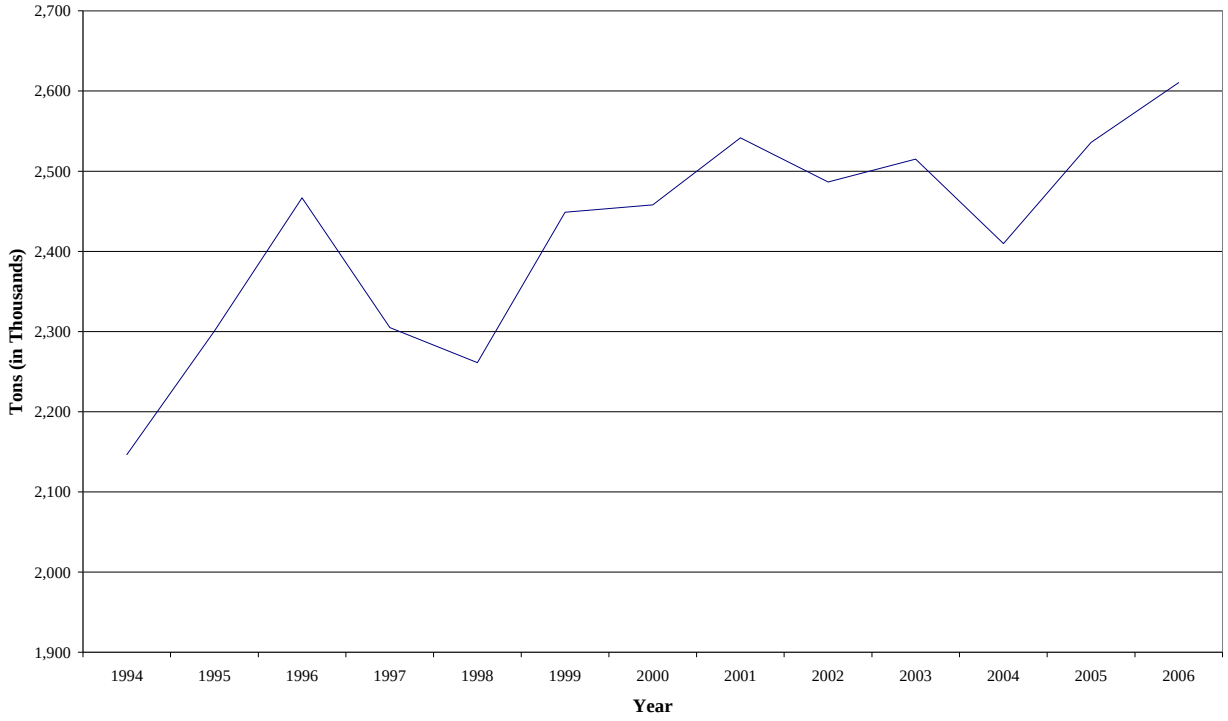

Table 1: Municipal Tons Disposed

Year	1994	1996	1998	2000	2002	2004	2005	2006
Municipal Tons Disposed in thousands of tons[1]	2,146	2,467	2,261	2,458	2,487	2,410	2,536	2,610

[1]tonnage is total municipal waste disposed in landfills and incinerated.

Table 2: Yearly Disposal Rate Per Person

Year	1994	1996	1998	2000	2002	2004	2005	2006
Utah Disposal in pounds per person per day	6.14	6.75	5.95	6.03	5.83	5.22	5.45	5.47
Utah Co. Disposal in pounds per person per day	3.69	4.89	4.89	5.02	5.50	3.98	4.06	3.19

A comparison of the municipal waste disposal numbers for Utah County and the USEPA shows a somewhat closer match. In general, however, the per-person disposal rate in Utah appears to be slightly higher than the national average.

Industrial Waste

Industrial solid waste is any non-hazardous solid waste generated by an industry or commercial process, including businesses associated with manufacturing, mining, construction,

transportation, communications, public utilities, and wholesale trade. Unlike municipal waste, industrial waste disposal rates can very greatly from county to county and from state to state. Except for disposal data from Class III landfills and two Class V landfills, the solid waste annual reports cannot be used to separate industrial waste form other waste types. On the 2003 and subsequent annual reports, disposal facilities were give the option to show the tonnages received at the facility for municipal, industrial and construction and demolition waste. Separation of the different waste streams increases the accuracy of the report but identifying all industrial waste received at a facility other than a Class III landfill is extremely difficult. The tonnages shown in Table 3 are for Class III landfills and the two Class V landfills that show separate waste types on their annual reports. Tonnages from 2003 on also include industrial waste reported by Class I and II landfills.

Prior to 1998 the *Solid Waste Permitting and Management Rules* did not require industrial waste landfills that were operated on the site of the industry to have a permit or report waste received.

In the year 2006 there were 21 Class III landfills. In addition to the Class III landfills receiving industrial waste, one Class V landfill accepts only industrial waste. Another Class V landfill receives large amounts of industrial waste. However, a large part of this waste comes from outside of Utah. Tonnages shown include only waste generated inside Utah and disposed at facilities within the state.

Some of the variability in the volume of industrial waste disposed can be accounted for by cleanups of contaminated sites in the state. A site cleanup during 1996 and part of 1997 as well as one in 2005 generated the large increase in yearly volume. 1999 through 2006 yearly volumes reflect, in part, better reporting by industrial landfills.

Table 3: Industrial Waste Disposal

Year	1994	1996	1998	2000	2002	2004	2005	2006
Total Tons	175,127	823,351	69,886	583,426	420,247	574,700	944,282	808,978

Construction and Demolition Waste, Yard Waste and Other Class IV or Class VI Waste

Landfills that are restricted to the disposal of only construction and demolition waste, yard waste, dead animals, asphalt, and tires are referred to as Class IV landfills. Class VI landfills are commercial disposal sites restricted to disposal of these same wastes. In many areas these landfills are referred to as construction and demolition landfills. In Utah these landfills range in size from large sites that may receive over 1/4 million tons of waste per year to small sites in rural areas that dispose mainly yard waste and receive less than 1000 tons per year. Table 4 shows the amount of waste reported by Class IV landfills and Class VI landfills.

Table 4: Class IV and VI Waste Disposal

Year	1994	1996	1998	2000	2002	2004	2005	2006
Total Tons	745,524	914,955	473,493	1,122,744	1,074,270	862,472	980,175	1,117,280

Most Class IV landfills do not have scales and estimate the waste received in cubic yards. For the summary of the solid waste annual reports, these yardage numbers are taken and converted to tons using an estimate of pounds per cubic yard that vary from 500 lb/yd^3 to 1000 lb/yd^3. Tonnages for landfills that are in rural areas are generally estimated using the 500 lb/yd^3 number while sites that receive large amounts of construction and demolition waste generally are converted using the 1000 lb/yd^3 number.

74% of the total tons of waste deposed at Class IV and VI landfills come from six sites in the Wasatch Front area. Fluctuations in the waste received at these six landfills reflect the population growth rates and construction activities that are taking place in the counties along the Wasatch Front and have a large affect on the total construction and demolition waste disposed in Utah. The drop of approximately 200,000 tons between 2003 and 2004 is, in part, due to changes at one of these facilities. During this period the facility added scales and weighed all loads. During this period other facilities throughout the state showed a decrease in tons disposed.

In 2000 a construction and demolition recycling facility was opened. Beginning in 2005 this facility shipped some or all of the waste designated for disposal to the Tekoi landfill on the Goshute Indian Reservation. This facility is not regulated by the Utah soild waste rules and the tons received by the facility are not reported in Table 4. The facility recycled 38,350 tons of waste and 121,599 tons were disposed at the Tekoi landfill in 2006.

Imported and Exported Solid Waste

Import and export of waste occurs in several ways. First, wastes that are generated in cities and towns along the borders of Utah are taken to the closest landfill. In some cases these wastes are exported to the adjacent state and in some cases the waste is imported into Utah. These waste exchanges with neighbors have been small in most years. In 2002 one facility in southern Utah began accepting waste from Page Arizona. The total waste imported to the Washington County landfill from page Arizona was 16,428 tons in 2006. Wasatch Integrated Waste Management District incinerator received 3503 tons of waste from out of Utah. Another form of waste import is waste coming to Class V landfills for disposal.

Table 5 shows the amount of waste imported into Utah for disposal. The largest amount of waste imported into the state is industrial waste. In addition to the municipal waste imports described above, a small amount of infectious waste is imported and incinerated at the one commercial infectious waste incinerator in the state. No information is available on the amount of waste exported from the state. The information for 2006 in Table 5 shows the non-hazardous industrial waste tonnage for the EnergySolutions radioactive waste facility. This is the first time that this

facility tonnage has been included in Table 5. Excluding the EnergySolutions waste the total tons coming form out of the state would be 121,903, all of which was disposed at the Allied Waste ECDC landfill in Carbon County.

Table 5: Solid Waste Imported

Year	1994	1996	1998	2000	2002	2004	2005	2006
Municipal tons	0	18,245	11,405	65,844	13,967	14,632	16,038	19,931
Industrial tons	685,772	624,664	303,226	298,616	150,885	229,290	275,837	764,591[1]
Total	685,722	642,909	314,631	364,460	164,852	243,922	291,875	784,522

[1]Tons include 642,688 tons of non-hazardous radioactive industrial waste disposed at EnergySolutions facility

SOLID WASTE MANAGEMENT FACILITIES

Solid waste management facilities in Utah cover the range of treatment, storage, and disposal. The mix of these facilities shows the changing nature of solid waste management in the state and a differing emphasis. As the population has increased the need for more disposal volume and the need for alternatives to disposal has become apparent. Siting of new landfills becomes more difficult as population grows and availability of land suited for landfill siting is limited by encroaching housing and other land uses. In many of the heavily populated areas of the state the emphasis has shifted to preservation of existing disposal space through recycling and composting programs and transfers of waste to regional landfill sites.

The mix of solid waste disposal options, incineration or landfilling, has not changed over the past several years. Change has occurred with the addition of several transfer stations, some of these combine materials sorting and recycling; permitting of two Class V landfills, one is in operation; and with an increase in the number of Class VI facilities. Following the implementation of the *Utah Solid Waste Permitting and management Rules*, which are based on the federal subtitle D rules, smaller facilities were closed and more regional facilities were sited. The service area for these facilities did not generally cross county boundaries, however. As hauling distances increased many communities outside the Wasatch Front found that having a nearby disposal site for construction/demolition waste and yard waste was important for solid waste management.

As discussed in the Introduction, Utah solid waste landfills have been segregated into six types. Class I landfills are facilities that receive more than 20 tons per day of all types of non-hazardous waste. Generally these facilities are publicly owned and the major portion of the waste received is municipal waste. Class II landfills are the same as Class I facilities but may not receive more than 20 tons per day, on a yearly average. Conditionally exempt small quantity generator hazardous waste and households that is exempt from the hazardous waste regulation and may be disposed at Class I or Class II facilities. Five new Class I facilities have been permitted between 1993 and the present. Four of these were replacements for facilities that were closed as a result of the changes in the solid waste rules. The one newly permitted Class I facility that was not a replacement for a closed site has not been constructed.

Class III landfills are industrial disposal sites that receive only waste generated by industrial processes and related waste. No municipal waste is allowed at Class III sites. Class III landfills have been subdivided into Class IIIa and IIIb facilities. Class IIIa facilities are industrial sites that can dispose of conditionally exempt small quantity generator hazardous waste. Class IIIb landfills may not dispose of conditionally exempt small quantity generator hazardous waste. No permitted Class IIIa landfills currently exist in Utah

Class IV landfills are limited in the waste that may be received for disposal. These wastes are construction waste, demolition waste, yard waste, asphalt, dead animals, some petroleum contaminated soils, and tires. Again Class IV landfills have been subdivided into Class IVa and Class IVb landfills. Class IVa landfills may dispose of conditionally exempt small quantity generator hazardous waste when it is generated as part of a waste stream that may be accepted at these sites. Class IVb landfills may not dispose of conditionally exempt hazardous waste. No permitted Class IVa landfills currently exist in Utah.

Class V landfills differ from the other landfill classes in that they are separated by the type of operation not the type of waste that is disposed. Class V landfills are facilities that are operated for a profit. The type of waste that is received is dependent on the permit and can be all non-hazardous solid waste, industrial waste, construction/demolition waste, or any combination of these. Three new Class V landfills were permitted between 2003 and 2005. One of these is a regional facility that is in Tooele County and is marketing its services to communities along the Wasatch Front. One facility is limited to asbestos and C/D disposal. It is located in San Juan County and serves the Four Corners area. The final facility is sited east of the city of Green River and has been permitted but has, as yet, not been constructed.

Class VI landfills are facilities that are operated for a profit. The waste stream that they may receive is limited to the same waste types as Class IVb landfills. The Class VI designation was created to separate landfills that take only this limited waste stream because they have a different status under the Solid and Hazardous Waste Act. Four new Class VI permits have been issued between 2002 and 2005. Two of these have begun operation. Several of the Class VI landfills along the Wasatch Front are nearing capacity and will have to be replaced within the next five years.

Ownership of solid waste facilities in Utah, shown in Table 6, has generally been in the public sector for municipal waste facilities. Some public facilities are operated through a contract with private companies, however, most are publicly owned and operated. Class III landfills are owned and operated by the companies that operate the industry which the landfill serves. Two Class III landfills are owned by a public utility to dispose of waste generated at the utility generating plant.

The total number of solid waste disposal facilities has decreased from the number active prior to the implementation of the *Utah Solid Waste Permitting and Management Rules* in 1993. The mix of facility types has also changed with an increase in the number of Class IV facilities and a decrease in the number of Class I and II landfills. Table 7 shows the change in facilities through time.

The change in the number of incinerators between 1998 and 2000 is the result of closing of small incinerators operated by many rural hospitals. These incinerators became subject to more stringent air quality rules in 1999 and all were closed rather than meet the requirements of the new rules. Incineration, as a disposal method, has remained at about 5% of the total municipal waste disposed throughout the past several years.

Table 6 Disposal Facilities by Type Active in 2006

Total Permitted Disposal Facilities by Type and Ownership

Facility Type	Total	Public	Private
Class I	20	19	1
Class II	11	11	0
Class III	21	2	19
Class IV	31	27	4
Class V	8	1	7
Class IV	9	1	8
MSW Incinerators[1]	1	1	0
Other Incinerators[1]	1	0	1
Total	**102**	**62**	**40**

[1]Numbers shown are for incinerators that require a permit under R315-306

Table 7 Disposal Facility Types

Facility Type	Year							
	1994	1996	1998	2000	2002	2004	2005	2006
Class I	19	20	18	18	19	20	20	20
Class II	36	28	16	17	17	11	11	11
Class III	15	18	19	23	23	21	21	21
Class IV	20	32	39	38	42	31	31	31
Class V	6	5	7	8	3	5	8	8
Class VI[1]					5	6	9	9
MSW Incinerators[2]	1	1	1	1	1	1	1	1
Other Incinerators[2]	18	18	17	3	4	4	4	5
Total	**115**	**122**	**117**	**108**	**114**	**99**	**105**	**106**

[1]Class VI category established in 2002
[2]Numbers show all incinerators, both permitted and those that existed prior to permit requirements or not required to have a permit

Remaining Municipal Waste Disposal Capacity

Disposal capacity is very hard to measure. It depends on several factors and can be changed by things as simple as changing the daily cover method used at the landfill or by buying a new

compactor. Many sites in the state have a disposal capacity of less than 20 years in the current permitted area and with the current waste handling practices. However, many of these sites have adjacent land that is available for purchase or the facility owners have purchased adjacent land but have not currently permitted it for use as a landfill.

Another way to increase the life of a landfill is to divert waste through recycling, composting, or through transfer of waste to other landfills. Sites in urban parts of the state have used most or all of these strategies to extend the life of the current landfill. Extending the life of a landfill through waste diversion can only go so far before another site is required. Within the next 20 years several landfills in Utah may be close to capacity and new sites will be required. Currently several cities, counties, and service districts are looking at future disposal options. Some of these counties are combining with adjacent counties to look at siting and operating regional facilities.

In addition to the potential for expansion at some current landfill sites in the state and waste diversion programs, at lease two landfills in the state has the capacity to dispose of all of the waste generated in Utah for the next 100 years.

Two new Class V landfills were permitted between 2003 and 2006. One of these facilities is in operation and is taking waste from transfer stations in Utah, Salt Lake, Tooele, and Weber counties. The second facility has not started construction as of mid 2007. One new Class I facility has been permitted in the same period. This facility is owned by a private company but is excluded from the Class V category by the exclusion found in Utah Code Annotated 19-6-102(3)(b)(iii). This facility has not started construction as of mid 2007.

With the currently operating Class V landfills and the existing capacity at publicly owned facilities, no disposal capacity restrictions are anticipated in the next 20 years.

Municipal Waste Management Facilities

Landfilling in publicly owned landfills continues to be the disposal option that is most used in Utah for MSW. In 2006 there were 35 landfills permitted to receive MSW for disposal. However, two of these have not been constructed. Of the landfills currently in operation, municipalities operate all but two. Utah has many small landfills as indicated by Table 8. Table 8 shows only landfills that received during the designated year. Starting in 2005 one landfill on the Goshute Indian reservation is included in the table but is not regulated by the Utah Division of Solid and Hazardous Waste.

As Table 8 indicates, the largest change in the mix of landfills in Utah has been the reduction in the number of facilities that receive 20 tons or less of waste per day. This shows the consolidation of landfills and the trend toward more regional facilities. Table 8 also shows that even when small landfills are combined they still accept very small amounts of waste. The reduction of small landfills between 1994 and 1998 did not result in an increase in the number of medium size landfills. Many of the small landfills in the state receive less than 5 tons per day.

Table 9 shows the percent of waste handled by each landfill size category. Although small and medimum landfills make up 65% of the landfill facilities in the state they dispose of only 8% of

the waste.

Table 8 Municipal Waste Landfills by Size

Landfill Size (in tons per day)	Year							
	1994	1996	1998	2000	2002	2004	2005	2006
0-20 (small)	36	28	15	15	18	12	12	12
21-100 (medium)	9	11	11	11	9	10	7	10
101+ (large)	11	10	7	11	11	10	15*	12*
Total	**56**	**49**	**33**	**37**	**38**	**32**	**34**	**34**

*One landfill is on the Goshute Indian reservation. It is not regulated by the Utah Division of Solid and Hazardous Waste and does not report waste disposed. However, waste going to the landfill is processed through a transfer station that is regulated. The tons used in Table 9 for large landfills include this waste.

Table 9 2006 Waste Disposal by MSW Landfills

Landfill Size (in tons per day)	# of MSW Landfills	Waste Disposed (in tons)	Total Waste Disposed in MSW Landfills
0-20 (small)	12	35,849	1%
21-100 (medium)	10	169,286	7%
101+ (large)	12	2,318,573*	92%
Total		2,523,708	**100%**

*See note for Table 8

Incineration of MSW has not changed over several years. One MSW incinerator, owned by Wasatch Integrated Waste Management District, has been in operation for several years and has consistently accepted 110,000 to 130,000 tons of waste per year. In 2006 the Wasatch Integrated Waste Management District incinerator disposed of 123,913 tons of MSW. This is 5% of the total MSW disposed in Utah

Industrial Waste Management Facilities

Industrial processes and facilities generate industrial waste. Industrial waste disposal facilities are generally located at the industry site. This waste can be very similar to MSW or it may consist of waste generated by specific industrial processes. Utah rules were changed in 1998 to require the permitting of industrial waste facilities that are located on the site of generation. Previous to this only landfills located off the site of generation were required to have a permit. This change resulted in the reporting of tonnages from industrial sites and a more accurate picture of this particular waste stream. The tonnage of industrial waste disposed of in Utah is also affected by the import of this waste to the ECDC landfill owned by Allied Waste. The amount of out-of-state industrial waste deposed at the ECDC facility has varied from a low of

approximately 150,885 tons in 2002 to a high of approximately 768,256 tons in 1995. Table 10 shows the industrial waste disposal by year for in state waste, out-of-state waste and the total waste disposed. It should be noted that the disposal numbers shown for 2006 reflect industrial waste disposed at the EnergySolutions radioactive waste landfill. This waste has not been reported in previous years. Excluding the EnergySolutions waste, the out of state tons desposed would be 121,903

Table 10 Industrial Waste Disposal

Waste Source	Year							
	1994[1]	1996[1]	1998[1]	2000	2002	2004	2005	2006
In State	175,128	823,351	69,885	583,426	420,247	574,700	944,282	808,978
Out of State	685,772	624,664	303,226	298,616	150,885	229,290	275,837	764,591
Total	**860,900**	**1,448,015**	**373,111**	**882,042**	**571,132**	**803,990**	**1,220,119**	**1,573,569**

[1] tonnages prior to 1999 do not reflect complete reporting

Construction/demolition Waste, Yard Waste, and Special Waste Management Facilities

Class IV and VI landfills may receive some or all of the following wastes: construction and demolition waste, yard waste, dead animals, asphalt, waste tires, and some types of petroleum contaminated soils. The number of Class IV landfills has increased over the past several years. This increase is the result of two factors. Rural areas have seen an increase in haul distances as landfills are regionalized and located in areas less sensitive to environmental and public concerns. As haul distances increase the need to have a nearby disposal option for large volume waste has increased. These wastes do not present the risk to the environment that municipal waste does and the requirements in the solid waste rules for permitting these facilities are less stringent.

The second factor that has lead to the increase the number of Class IV and VI facilities is that municipal landfills and transfer station have made an effort to exclude construction and demolition waste and other large volume wastes that can be disposed at Class IV or VI landfills. Excluding Class IV type waste saves on landfill space. The general increase in construction activity in Utah has also contributed to the increased need for alternative disposal sites for construction and demolition waste.

Class VI landfills are separated from Class IV landfills by their operational goals (Class VI landfills are operated for a profit) rather than the type of waste received.

Table 11 Class IV and VI Disposal[1]

Year	1994	1996	1998	2000	2002	2004[2]	2005[2]	2006[2]
Class IV Sites	17	29	39	38	42	31	31	31
Class IV Tons	59,228	86,955	152,893	204,244	262,130	156,162	143,114	202,635
Class VI Sites	3	3	3	4	5	6	9	9
Class VI Tons	686,296	828,000	320,600	918,500	816,140	646,482	649,924	771,463
Total Tons	**745,524**	**914,955**	**473,493**	**1,122,744**	**1,078,270**	**802,644**	**793,038**	**974,098**

[1]The Class VI category was not created until 2002. The numbers shown in the table prior to 2002 are for facilities that were assigned to the Class VI category in 2002.
[2]The total construction and demolition tons disposed in the state is larger than this number due to construction and demolition disposal reported by Class I and II landfills.

Table 12 Total Construction and Demolition Disposed

Year	1994	1996	1998	2000	2002	2004	2005	2006
Class IV and VI	745,524	914,955	475,493	1,122,744	1,078,270	802,744	793,038	974,098
Other Landfills	-	-	-	-	-	59,728	75,027	90,312
Transfer Stations[1]							112,110	174,469
Total	**745,524**	**914,955**	**473,493**	**1,122,744**	**1,078,270**	**862,742**	**980,175**	**1,238,879**

[1]Transfer station tons are for waste delivered to transfer stations and sent to the Tekoi landfill on the Goshute reservation which is not under state regulation and does not report waste received.

Beginning in 2003 Class I and II landfills were given the option to separate the total waste received for disposal into separate categories of municipal waste, industrial waste and construction and demolition waste. The total tons shown in Table 12 reflect this change in reporting. In addition to the change in reporting discussed above, the 2005 tons reflect the addition of a landfill on the Goshute reservation that is not regulated by the Division and does not report waste received. However, the construction and demolition waste received by the facility is processed by a transfer station that is required to report the tons processed. The total for 2005 and 2006 reflects the transfer station tons along with the change in reporting started in 2003.

Composting Facilities

Composting of yard waste has become a major component of the solid waste management system for many areas of Utah. Some areas have also included sewage sludge in the composting program. Composting of other waste such as food waste has not enjoyed the same acceptance

that yard waste and sludge composting has received. Composting is used to reduce disposal costs and to increase the life of current landfills. Several sewage treatment facilities operate compost sites that are composting sewage sludge. These facilities are regulated by the Division of Waster Quality and are not included in Table 13. Composting is also used by several agricultural operations as a method to convert manure to a more marketable commodity. These facilities are also regulated by the Division of Water Quality and are not represented in Table 13 except for facilities that use dead animals as part of the compost. Agricultural operations that compost dead animals are regulated by the solid waste rules and are part of Table 13. Facilities that compost waste that is generated on the facility site and use the compost on site do not have to report the waste composted and are not part of table 13. This exemption covers several large compost operation including one operated by Brigham Young University that is the only compost facility that uses food waste as one of the compost feed stocks. It is obvious that the total compost reported in Table 13 is under reporting the actual volume of waste composted.

Most compost facilities are operated by municipalities as part of the disposal operations conducted by the municipality. A few private facilities compost waste generated by operations such as yard services.

Table 13 Compost Facilities

Year	1994	1996	1998	2000	2002	2004	2005	2006
Compost Facilities	7	14	15	17	25	23	20	21
Material Received (tons)	29,000	13,763	60,118	102,209	128,784	183,547	186,817	139,313

Recycling Facilities

Recycling in Utah is done by private industry. Public recycling programs consist of curbside collection and drop off centers. Currently there are approximately 10 cities that have curbside collection programs. Curbside collection has expanded in the past few years and continues to spread in the urbanized areas along the Wasatch Front. These programs collect metal plastic and paper in a single container system. The material received is taken to a sorting center and the separate recyclable products and bailed and shipped. In addition to curbside programs for residents, businesses in most Wasatch Front cities have commercial recycling available for corrugated cardboard and paper.

Several landfills operate drop off centers that accept ferrous and nonferrous metals, paper, corrugated cardboard, tires, used oil, and carpet padding. Some collection of plastic and glass also takes place.

Information on the amount of material recycled in Utah is not complete. The annual reports for solid waste facilities have a section to show the waste that is recycled. However, recycling that

is conducted inside a building is not covered by the *Solid Waste Permitting and Management Rules*. The Division does not have information on the number of recycling facilities that exist or on the amount of waste that is recycled in these facilities.

The total tons of material recycled, from the 2006 annual report is 301,421 tons. Again this number does not account for much of the recycling taking place in the state.

One construction and demolition waste transfer station and recycling facility is operated in Salt Lake City. This facility processed 192,094 tons of waste in 2006 and recycled 38,350 tons of material.

In 2005 a transfer station and recycling center was opened by Metro Waste. The facility receives and sorts waste collected by several waste haulers. Waste is dumped on the tipping floor and then run along a conveyer where recyclables are removed. After removing the recyclables the remaining waste is bailed and is transported to the landfill on the Goshute reservation.

Waste Handling Facilities

Unlike landfill ownership in Utah, waste handling is more evenly split between private and public ownership. Many cities, counties, and service districts operate collection services that handle the residential waste while private companies handle commercial waste pickup. Other cities, counties, and service districts contract all pickup with private companies. The number of private companies collecting waste varies with the population of an area. Urban areas have many collection companies, and rural areas have few or only a single company providing collection services.

As landfills have been moved to remote areas, or as a method to divert a portion of the waste stream, several transfer stations have been opened. Waste received from citizens, businesses and from collection vehicles is moved to transfer trucks to be hauled to the landfill. This is a change from the recent past when most waste from transfer stations was hauled by rail to the landfill. Currently no transfer station is using rail haul as a transportation method.

Table 14 shows the increase in the number of transfer stations in recent years. In 2006 nine transfer stations were processing MSW and three were processing C/D waste only. Two transfer stations, one processing MSW and one processing C/D use the facility for extensive recycling activities. Both process the waste received through sorting lines and remove several types of recyclable material.

Table 14 Transfer Stations

Year	1994	1996	1998	2000	2002	2004	2005	2006
C/D	NA	5	8	1	3	3	3	4
Tons				6144	109,375	266,290	196,422	302,100
Municipal				8	8	8	9	10
Tons	NA	288,122	538,809	709,594	703,628	722,919	867,323	926,461
Industrial								1[1]
Tons								74,406
Total Tons		288,122	538,809	715,738	813,003	989,209		1,302,967

[1]One transfer station reported a separate tonnage for industrial waste

Conclusions

This document is not intended to be a comprehensive update of the Utah solid waste plan that was completed in 1994. The Utah solid waste plan was a combination of the plans that were done by each county. The county planning effort that was conducted at that time has not been repeated and the information that was provided by the county plans is not available. The annual solid waste reports that are completed by solid waste facilities each year provided the basic information that was used in this update.

The available annual report information provides a picture of the current state of waste disposal in Utah. That picture shows a solid waste system that is based on landfilling. Incineration of waste has not increased and currently the Division of Solid and Hazardous Waste does not have any permit applications for new solid waste incinerators.

The biggest changes in the solid waste system from 1994 to the present are the increase in the efforts of landfill operators to preserve landfill space by use of composting, recycling and transfer of waste to other facilities and the addition of new regional landfills. As the space in current landfills is reduced the effort to conserve the remaining space will continue. The increase in the number of transfer stations has also allowed competition between facilities that are intended to accept waste on a commercial basis and landfills operated by local governments. Competition for waste will have an effect on the solid waste disposal system in Utah that will be evident in the next few years.

Another area that is not currently being pursued, but may be in the future, is reduction of waste generation. As indicated by the per person disposal rate, Utah citizens dispose of more waste per person than the national average. This may be the result of lower recycling rates in Utah or an increased generation rate. Recycling and waste generation may provide fertile areas for counties and cities to explore for future reductions in waste coming to landfills.